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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/615,811	07/08/2003	Gerald S. Koermer	4535	1451

7590 11/03/2005

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EXAMINER	
TRAN, BINH Q	

ART UNIT	PAPER NUMBER
3748	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/615,811	KOERMER ET AL.	
	Examiner	Art Unit	
	BINH Q. TRAN	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-59* is/are pending in the application.

4a) Of the above claim(s) *1-42 and 56-59* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *43-45* is/are rejected.

7)☒ Claim(s) *46-55* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *08/04/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This office action is in response to applicant's election filed August 17, 2005.

Response To Election/Restriction

Applicant's election without traverse of the species of Group IV, in response to the election/restriction requirement mailed August 09, 2005, is acknowledged.

Claims 1-42, and 56-59 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a ***nonelected inventions***. Election was made **without** traverse in Paper filed August 17, 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP. 821.01.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 43-45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Denniston (Patent Number 6,481,222) in view of Dunne (Patent Number 5,5,667,560).

Regarding claim 43, Denniston discloses a method for cleansing the atmosphere by a vehicle powered by an internal combustion engine (20) comprising the steps of: a) drawing a

first stream of atmosphere into the engine compartment (12, 42) of a vehicle by means of a fan and/or the motion of the vehicle, said first atmosphere steam (13, 14) being at ambient engine cabin temperature; b) drawing a second stream of atmosphere either separately from said first stream or split from said first stream into said second stream by means of a fan (5) and/or the motion of the vehicle; c) heating said second atmosphere stream (15, 16) by sensible heat from exhaust gases produced by said engine to temperatures in the range of approximately 150 to 300 ^{o}C; d) providing a heat wheel (21) having channels extending therethrough from one side of said heat wheel to the opposite side of said heat wheel; e) passing said first stream of atmosphere through channels occupying, at any given time, a first position dependent portion of said heat wheel to adsorb volatile organic compounds contained in said atmosphere; f) passing said second stream of heated atmosphere through channels occupying, at any given time, a second position dependent portion of said heat wheel to desorb volatile organic compounds contained in said channels; g) directing said second stream of heated atmosphere with volatile organic compounds desorbed from said wheel to the gaseous emission treating system of said vehicle (e.g. See col. 69, lines 47-67; col. 70, lines 1-67; col. 71, lines 1-51); and, h) rotating said wheel so that before the channels in said first position dependent portion of said heat wheel become saturated with volatile organic compounds they are rotated into a position whereat the channels become channels forming the second position dependent portion of said heat wheel while the desorbed channels formerly forming the second position dependent portion of said heat wheel are rotated into a position whereat the channels become part of the channels forming said first position dependent portion of said heat wheel (e.g. See Figs. 1-13 and 78-81; col. 31, lines 4-67; cols. 32-33, lines 1-67; and col. 34, lines 1-65). However, Denniston fails to disclose that the channels

having as a coating thereon activated carbon of a micropore porosity, the carbon having a density of at least 0.5 g/in^3 and a mean particle size not greater than 25 microns.

Dunne teaches that it is conventional in the art, to use a heat wheel having channels extending therethrough from one side of said heat wheel to the opposite side of said heat wheel; the channels having as a coating thereon activated carbon of a micropore porosity, the carbon having a density of at least 0.5 g/in^3 and a mean particle size not greater than 25 microns (See Figs. 1-3; col. 8, lines 64-68; col. 9, lines 1-22).

It would have been obvious to one having ordinary skill in the art at the time the invention was made, to use a heat wheel having channels extending therethrough from one side of said heat wheel to the opposite side of said heat wheel; the channels having as a coating thereon activated carbon of a micropore porosity, the carbon having a density of at least 0.5 g/in^3 and a mean particle size not greater than 25 microns of Denniston, as taught by Dunne for the purpose of absorbing the poisoned materials, so as to reduce the poisoned materials in the engine compartment, and to clean the intake air to the vehicle cabin.

Regarding claim 44, Dunne further discloses that the heat wheel is rotated as a function of the time it takes to desorb the volatile organic compounds in said second position dependent portion of said heat wheel (See Figs. 1-3; col. 8, lines 64-68; col. 9, lines 1-22).

Regarding claim 45, Denniston further discloses that the heating of said second atmosphere stream occurs by passing said second stream over an exhaust manifold of said engine (e.g. See col. 69, lines 47-67; col. 70, lines 1-67; col. 71, lines 1-51).

Allowable Subject Matter

Claims 46-55 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Since allowable subject matter has been indicated, applicant is encouraged to submit formal drawings in response to this Office action. The early submission of formal drawings will permit the Office to review the drawings for acceptability and to resolve any informalities remaining therein before the application is passed to issue. This will avoid possible delays in the issue process.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure and consists of six patents:

Bhatti et al. (Pat. No. 5509,275), Greger et al. (Pat. No. 6212882), Corwin et al. (Pat. No. 6216778), Ohgami et al. (Pat. No. 6820681), and Hoke et al. (Pat. No. 6818254), Bayerle et al. (Pat. No. 6684629) all discloses an exhaust gas purification for use with an internal combustion engine.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Binh Tran whose telephone number is (571) 272-4865. The examiner can normally be reached on Monday-Friday from 8:00 a.m. to 4:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas E. Denion, can be reach on (571) 272-4859. The fax phone numbers for the organization where this application or proceeding is assigned are (571) 273-8300 for regular communications and for After Final communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BT
October 25, 2005

Binh Q. Tran
Patent Examiner
Art Unit 3748